National Park Service
U.S. Department of the Interior

Pacific Island Network Quarterly

Quarterly Newsletter of the
Pacific Island Network
Inventory & Monitoring Program
April - June 2007, Issue no. 08

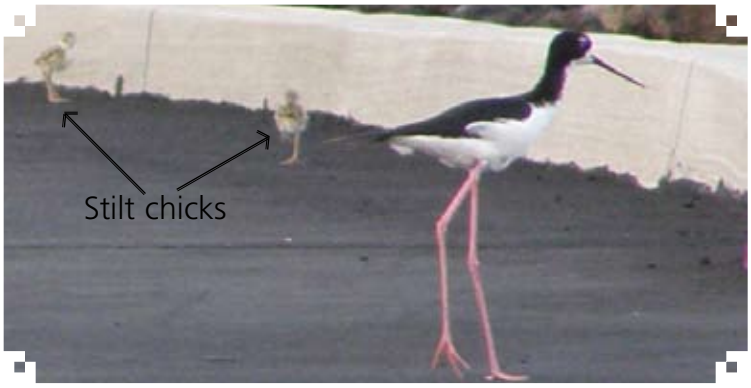
A bespeckled egg of the endangered Ae'o or Hawaiian stilt (*Himantopus mexicanus knudseni*) at Kaloko-Honokōhau National Historical Park

Aloha - Talofa - Greetings
Tirow - Hafa adai

The Pacific Island Network (PACN) Inventory and Monitoring Program (I&M) has undergone some fundamental programmatic changes since our last issue. Please see the Board of Directors Note for more details. The most exciting new event, however, is at Hawai'i Volcanoes National Park where a series of recent earthquakes has created a new fissure for lava to surface. You can keep up to date on this and all eruption activity of the world famous Kilauea volcano at the USGS Hawaiian Volcano Observatory Website at: http://volcano.wr.usgs.gov/hvostatus.php

"The parents and the two chicks that hatched began their odyssey this morning. They got down the parking lot curb but couldn't negotiate up the outer curb, so a park employee used a sign to create a ramp for them. They moved away from the area while the ramp was being placed, but eventually made their way back and used it to scale the curb, venture onto the graded lava, and began the walk over the rugged a'a' flow between them and Aimakapā pond. If they make progress through the flow tonight we will probably not see them again."

—Richard Boston, Integrated Resource Manager, Kaloko-Honokōhau NHP



Hawaiian Stilt chicks, born in Kaloko-Honokōhau National Historical Park, make the long and arduous journey from the nest through parking lots and over lava to the sanctuary of the seashore.

National Park Service
U.S. Department of the Interior

Pacific Island Network
P.O. Box 52
1 Crater Rim Drive - Qtrs 22
Hawai'i National Park, HI 96718

Hawaii-Pacific Islands Cooperative Ecosystem Studies Unit
University of Hawaii at Manoa
3190 Maile Way, St.John Hall #408
Honolulu, HI 96822-2279

The National Park Service has implemented natural resource inventory and monitoring on a servicewide basis to ensure all park units possess the resource information needed for effective, science-based management, decision-making, and resource protection.

Interim Program Manager:
Penny Latham 808-985-6186

Pacific Island Network Staff:
Leslie HaySmith 808-985-6180
Donna Ashenmacher 808-985-6182
John Boetsch (detail) 808-985-6184
Tahzay Jones 808-985-6188
Larry Basch 808-956-8820

Hawaii-Pacific Islands CESU Cooperators:
Heather Fraser 808-985-6181
Sarah Nash 808-985-6183
Karin Schlappa 808-985-6183
Viet Doan 808-985-6184
Page Else 808-985-6187
Kelly Kozar 808-985-6184
Cory Nash 808-985-6185
Gail Ackerman 808-985-6189
Rise Hart 684-633-7082 (NPSA)
Paul Berkowitz 808-967-7396 x268

Steering Committee Members
ALKA – Richard Boston/Aric Arakaki
AMME – Peter Craig (interim)
HALE – Steve Anderson
HAVO – Rhonda Loh
KAHO – Richard Boston
KALA – Guy Hughes
NPSA – Peter Craig
PUHE – Sallie Beavers/Daniel Kawaiaea
PUHO – Paula Hartzell
USAR – Eric Brown
WAPA – Peter Craig (interim)

Comments? Write to:
Cory Nash, Editor
Pacific Island Network Quarterly
P.O. Box 52
Hawai'i National Park, HI 96718
Phone: 808-985-6185
Fax: 808-985-6111
Email: corbett_nash@contractor.nps.gov
http://science.nature.nps.gov/im/units/pacn/

Mailing List: Please pass this newsletter on to interested parties. To be added to or removed from mailing, please contact Editor.

***NOTE:** Unless indicated all photos and articles are NPS.
CONTRIBUTORS: C. Nash, J. Jeffrey, T. Togia, K. Schlappa, P. Latham, G. Ackerman, D. Hu, K. Kozar, P. Else, V. Doan, D. McKay, A. Arakaki, R. Boston, J. Jokiel

Board of Director's Note

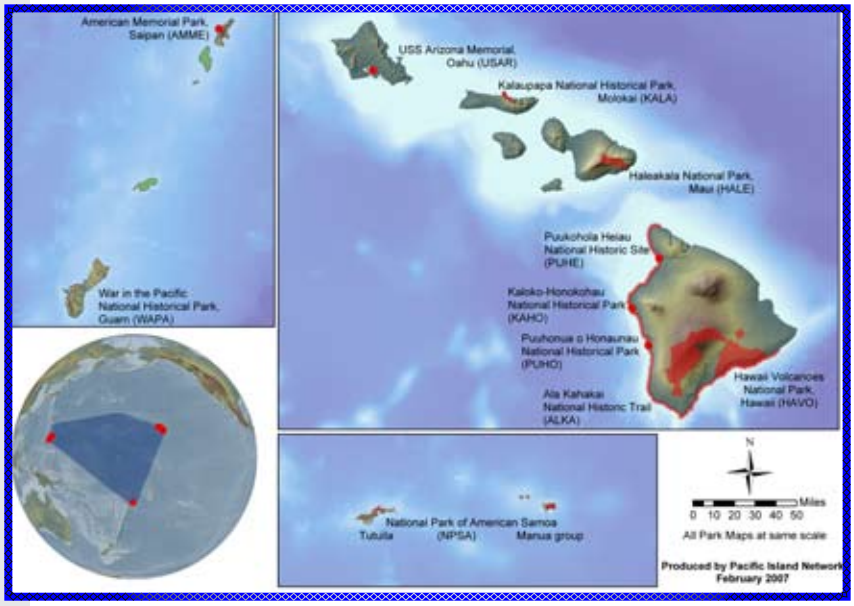
Penny Latham -Interim PACN I&M Program Manager

Aloha Everyone,

For those of you who do not know me, I am the Pacific West Regional Inventory and Monitoring Coordinator and usually find myself in the Pacific Northwest rainforest around Seattle, WA. Since June I have traded in the PNW rainforest for the tropical rainforest of Hawai'i Volcanoes National Park while serving as the Acting Program Manager (PM) for the Pacific Island I&M Network (PACN). So what am I doing here and why a PM? The PACN I&M program has accomplished a tremendous amount of work through inventories in individual parks and developing and completing monitoring and data management plans for the network of parks. They have continued to foster relationships with USGS, coral reef scientists at parks, and scientists from the University of Hawaii to assist in developing the I&M program. However, structures that were put in place to "develop" a program don't necessarily work as well to "implement" a program. Over the last year the network has struggled to find a clear path and actually begin operational monitoring. In addition, several I&M staff members left the network for other positions. Thus we were afforded a unique opportunity to "take our pulse". Meaning to look at where we had been, where we wanted to go, and outline a strategy to get us there.

A review of the Pacific Island Coral Reef Program was conducted in Dec. 2006, followed by a review of the PACN I&M program in May 2007. The reviews made several recommendations: (1) align the I&M program more closely with the reality of park operations, (2) ensure coordination between the Coral Reef and I&M Programs, (3) clarify and simplify supervisory relationships, roles, and responsibilities, (4) simplify the organizational structure, (5) clarify and affirm the list of Vital Signs, (6) provide leadership and accountability to implement monitoring, and (7) improve communication.

We are now implementing these recommendations and until the new organization is in place, anticipated October 1, 2007, I will serve as the interim PM. A new PM will be hired who will oversee I&M. The coral reef position at HAVO will be transferred to the I&M program and report to that PM. At the same time, a Steering Committee has been formed (see list on left). Immediate duties of the Steering Committee will include filtering items for the Board of Directors to review, and reviewing I&M strategic plans such as staffing plans for protocol implementation and the Annual Administrative Report and Work Plan. The PM and Steering Committee were also tasked with developing a clear statement of Roles and Responsibilities for the various groups and key positions of the network, and updating the network charter. This is a work in progress. We recognize that change is difficult, but everyone involved is working hard to ensure that the outcome is an effective monitoring program for Pacific Island parks. We thank you for your patience and invite you to join with us as we build on the excellent work that has already been accomplished in the network.



Map of the 11 Pacific Island Network park units.

Monitoring Protocols in PACN Park Units

The Pacific Island Network and its partners are developing 14 Vital Signs protocols for long-term monitoring in PACN park units. As we are currently in the protocol development phase of monitoring, the scheduled protocols in some of the park units below may vary before implementation. This list reflects our current (June 2007) Vital Signs monitoring priorities.

(Please note that these Vital Signs are listed in random order.)

American Memorial Park

Established invasive plant species
Focal terrestrial plant species/communities
Climate
Groundwater dynamics
Water quality

Pu'ukoholā Heiau National Historic Site

Landscape dynamics
Climate
Established invasive plant species
Early detection of invasive plants
Water quality
Groundwater dynamics
Freshwater animal communities

War in the Pacific National Historical Park

Freshwater animals communities
Landscape dynamics
Climate
Marine fish
Focal terrestrial plant species/communities
Benthic marine community
Fish harvest
Water quality

Kaloko-Honokōhau National Historical Park

Benthic marine community
Landscape dynamics
Climate
Established invasive plant species
Early detection of invasive plants
Focal terrestrial plant species/communities
Bats (insect)
Marine fish
Groundwater dynamics
Freshwater animal communities
Fish harvest
Water quality

National Park of American Samoa

Seabirds
Bats (fruit)
Focal terrestrial plant species/communities
Benthic marine community
Climate
Established invasive plant species
Water quality
Freshwater animal communities
Early detection of invasive plants
Marine fish
Landbirds
Fish harvest

Kalaupapa National Historical Park

Established invasive plant species
Landscape dynamics
Climate
Focal terrestrial plant species/communities
Early detection of invasive plants
Water quality
Seabirds
Marine fish
Fish harvest
Benthic marine community
Freshwater animal communities

Hawai'i Volcanoes National Park

Early detection of invasive plants
Landbirds
Seabirds
Bats (insect)
Focal terrestrial plant species/communities
Landscape dynamics
Climate
Established invasive plant species
Water quality
Freshwater animal communities

Haleakalā National Park

Landbirds
Focal terrestrial plant species/communities
Early detection of invasive plants
Landscape dynamics
Climate
Seabirds
Water quality
Established invasive plant species
Freshwater animal communities

Pu'uhonua o Hōnaunau National Historical Park

Bats (insect)
Landscape dynamics
Climate
Established invasive plant species
Early detection of invasive plants
Water quality
Groundwater dynamics
Freshwater animal communities

Ala Kahakai National Historic Trail

Climate
Water quality
Early detection of invasive plants

USS Arizona Memorial

Water quality
Climate

Data Management

Pacific Island Network Web Site is Up and Running!

The Pacific Island Network web site (http://www1.nature.nps.gov/im/units/pacn/index.cfm) is chock full of information about the Inventory and Monitoring Program in the PACN. On the home page you will find links to web pages for Inventories, Monitoring, GIS & Maps, Reports & Publications, and Education & Outreach. You will also be able to locate general information about the program, who we are, and how to contact us. By clicking on various links you can find information such as: PACN Inventories, the progress of Vital Sign monitoring protocols, GIS standard operating procedures, I&M and park-specific reports and publications, and products such as the newsletters and brochure.

Many of these products and reports may be downloaded by the public, although some are only available to National Park Service employees. On the home page is a link to the NPS restricted intranet website, where more sensitive Inventory products and draft material on the Vital Sign protocols are located.

The website is a work in progress. As more information and products become available they will be posted on the web site. So come take a look for yourself, and see all the interesting work going on at I&M and in the PACN!

Notes from the Field

"Welcome to Beautiful Cool Guam". I don't know if that airport sign was a joke, but I hope it was simply referring to the island's relaxed atmosphere, friendly people and beautiful sights. In fact, the only way to be "cool" in Guam is to find water and jump in!

As an aquatic intern for the I&M program, that wasn't too hard. I had the exciting opportunity to wade through the streams of Guam one week and trudge through the wetlands of Saipan the next. I accompanied aquatic ecologists Tahzay Jones (NPS-PACN) and Anne Brasher (USGS) to Guam's War in the Pacific National Historical Park (WAPA) and American Memorial Park (AMME) on Saipan in the Northern Mariana Islands to test water quality and study freshwater animals. The trip was successful, plus we made great connections with local people. Anne, Tahzay and I, along with scientists from

Danielle McKay, aquatic volunteer extraordinaire

Guam's EPS ABD Division of Aquatic & Wildlife Resources, examined the physical, chemical, and biological characteristics of area watersheds. We assisted Fisheries Biologist Brent Tibbats in snorkel and dip-net surveys to assess diversity, distribution, and densities of freshwater animal species. Using parallel methods, we extended the surveying into WAPA streams in the following days. We took physical and chemical measurements as well as captured and released many healthy gobies, snails, shrimp, and even some eels and crabs. The information we gathered told us a lot about the health and vitality of freshwater streams in our parks. Plus being wet all day is a great way to beat the heat!

In Saipan, we navigated AMME's dense red mangrove forest. Although surrounded by development, this modest wetland area stays shaded, quiet, and fairly secluded. Only remnants of human activity, such as an old metal mess kit from WWII, remain. It was nice to see areas deep in the forest with beautiful, healthy native mangrove habitats. Also within park boundaries, we tested the City of Garapan drainage water reservoir and the near-shore marine areas where this water flows. The water tested in those areas was poor quality and contaminated with excessive nutrients and pollutants.

People need to take time to learn about these habitats, like we did, as a reminder of how beautiful and special these places really are. It may make some people think twice about what they spray on their lawns or wash down the drain.

—Danielle McKay

Featured Staff

Viet Doan joined I&M in February 2005 as a Spatial Data Associate. He moved to Hawai'i in 2003 after getting tired of shoveling snow in northern Michigan for many years. Before that, Viet lived in Texas and attended the University of Texas Austin and Texas Tech University where he learned square dancing, and received a Master's degree in Environmental Studies. Viet has been working in the GIS field for more than 15 years. He also enjoys swimming, yoga, friends, cooking, and sleeping.

Page Else (below) fell in love with Hawai'i in 1977, while visiting from a -30°F Alaskan winter. She graduated from the University of Alaska Fairbanks with a Masters degree in Biological Oceanography, and spent the rest of the century in Alaska with a number of fascinating jobs. These included collecting copepod fecal pellets to test for the presence of oil, interviewing fishermen to collect fisheries harvest statistics, and applying Japanese seaweed cultivation methods to giant kelp. Page started with I&M in 2004 as a data-miner. For the past year she has researched GIS and remote sensing methods for the landscape dynamics monitoring protocol. Page loves living in Hawai'i, researching nature, swimming every day, and studying hula.

Program Update

Programmatic Changes: In May, the PACN gathered all of the key players of the program for a week-long meeting at Hawai'i Volcanoes National Park to discuss the future of the I&M program in the Pacific Islands. A few structural changes to the composition of the program were suggested as we move forward into the monitoring portion of I&M. The most significant of these changes was the creation of a Steering Committee to help guide and prioritize tasks for the network. For more detail on the changes resulting from the May meeting, please see Page 2 of this newsletter.

Outreach: Outreach activities for this spring and early summer have focused on a GIS training at HAVO, preparing displays for the cultural festival at PUHO, and presentations at the George Wright Society Conference in St. Paul, MN. Otherwise, our efforts have been more technical in nature. Our website is continually improving as we ameliorate design techniques and continue to post information and news. We have also begun work on short Vital Signs monitoring videos which will be available for download soon. These two-minute videos will depict each Vital Sign, monitoring methods, and emphasize the importance of long-term monitoring of natural resources in an easily accessible and understandable format.

Staffing: The PACN is pleased to introduce the short-term additions of CESU cooperators Paul Berkowitz and Sarah Nash. Sarah will be on a four month assignment as a Database Specialist, and Paul will be taking up the reins as Vegetation Monitoring Protocols Facilitator. On the other side of the coin, I&M must say adieu to contract Statistician, David Schneider, who has completed his work with us. Finally, I&M wishes Ali Ainsworth the best of luck as she starts her new job with State of Hawai'i.

I&M is also pleased to welcome two NPSers to the PACN fray for the summer. Penny Latham, Pacific West Region I&M Coordinator, has joined the PACN for a four month stint as the interim Program Coordinator. In addition, the PACN would like to extend a warm aloha to John Boetsch, Data Manager for the North Coast Cascades Network, who is on a two month detail with the PACN.

In August, the PACN will be pleased to have Dan Cogan join us to begin work drafting the network vegetation mapping proposal. Sandy Margriter, GIS Specialist in the Honolulu office, will work closely with Dan to assist in setting up park interviews.

Calendar • April - June, 2007

Apr. 2-6 = Water Quality field testing and I&M Cultural Resource Meetings at HALE

Apr. 16 = George Wright Society conference in St. Paul, MN. Three PACN I&Mers attended and presented two posters

Apr. 24-26 = GIS training at HAVO led by I&M staff and cooperators

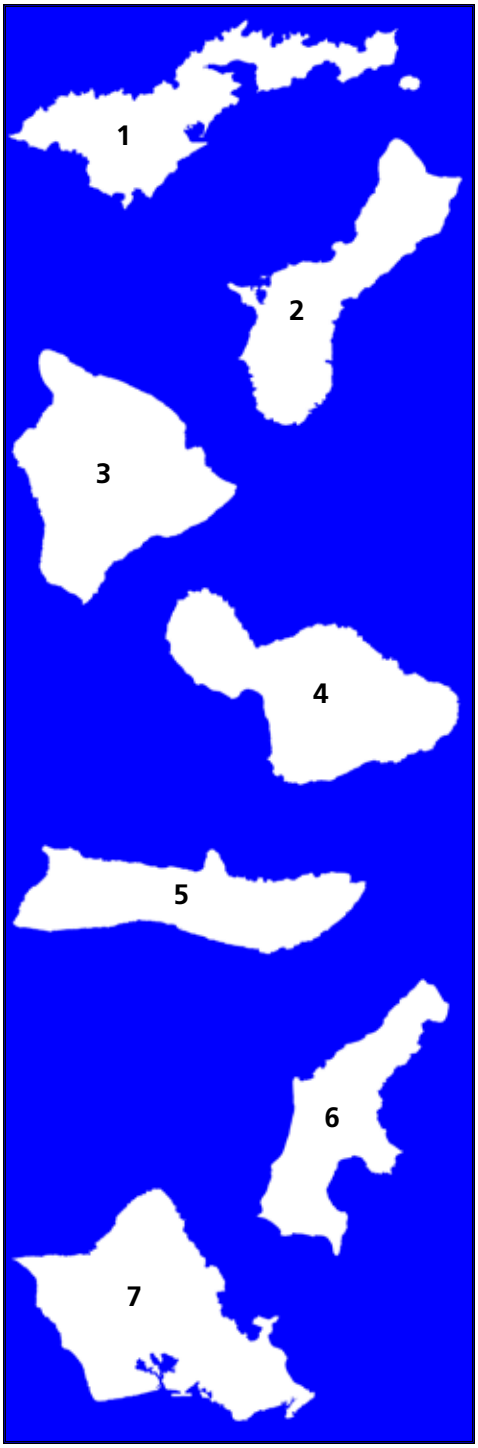
May. 7-11 = PACN I&M meeting at HAVO to discuss direction of program

June 30-July 1 = PUHO cultural festival - I&M displayed results from certain PUHO inventories

Games Corner

PACN Geography Whizzes Only!

Can you name the Pacific Islands where national park units are found just by the shape of islands? Note: These islands are not to scale.



ANSWERS:

1- Tutuila (the largest American Samoa island)
2- Guam
3- Hawai'i Island, Hawai'i
4- Maui, Hawai'i
5- Moloka'i, Hawai'i
6- Saipan, Commonwealth of the Northern Mariana Islands
7- O'ahu, Hawai'i

Bonus Question: Which PACN national park unit(s) is on each island?

Seabirds Play a Vital Role

Fua'o or Red-footed booby chick (*Sula sula rubripes*)

Description: Seabirds have adapted to life within the marine environment and often spend months at sea feeding on fish and invertebrates. Some species roost on land, while others return only when it is time to build nests and rear young. Seabirds tend to have a long life span (20 to 60 years), have fewer young than other birds, and invest a lot of time in their offspring. Many species nest in colonies. Ecologically, seabirds are an important resource as they play a significant role in cycling nutrients from the ocean to the land. The presence of seabirds is a strong indicator of the health of their environments. Many species are currently threatened by loss of nesting and roosting habitat, introduced predators, disease, ingestion of litter, and fishing by-catch.

Cultural Significance: Seabirds and humans share a long history. A contributing factor to the Polynesian colonization of the Pacific Islands may have been the use of seabirds for navigation. Noddies, boobies, and terns have different ranges when flying from land to the open ocean to feed, and early seafarers may have determined distance to an island by the species foraging nearby. Seabirds were also an early food source, which ultimately contributed to the demise of many seabird species. Polynesians utilized other parts of seabirds, including bones for tool construction and feathers for helmets and capes. In Hawaii, Kāhili (feather standards) were adorned with tern and tropicbird feathers. On Samoa, Fiji, and Tonga, tropicbird streamers (central tail feathers) were used in headdresses and as articles of trade.

Species Status: Rare, threatened, and endangered seabird species are of primary concern to the Pacific Island Network (PACN). Two species within these categories are the endangered Hawaiian petrel (*Pterodroma sandwichensis*) and threatened Newell's shearwater (*Puffinus auricularis newelli*). Both are found in Hawai'i Volcanoes National Park (HAVO), Haleakalā National Park (HALE), and Kalaupapa National Historical Park (KALA).

According to fossil remains, the Hawaiian petrel, or 'ua'u, was once the most numerous seabird in the main Hawaiian Islands, and it nested in a wide elevation range. Colonies are now confined to high-elevation subalpine habitat where mongooses are absent, although cats are not deterred from predating colonies in this habitat. 'Ua'u nest in burrows in small numbers at HAVO, and in much larger colonies at HALE.

The Newell's shearwater, or 'a'o, was also abundant and widespread on the main Hawaiian Islands, but is now reduced to a few remnant breeding colonies on the islands of Moloka'i and Hawai'i. Its stronghold remains Kaua'i, but even there the population may be in decline. The 'a'o breeds in burrows or deep rock crevices at higher elevations, frequently below dense vegetation. Owing to the presence of predators, this species has been known to nest on steep slopes exceeding 65°.

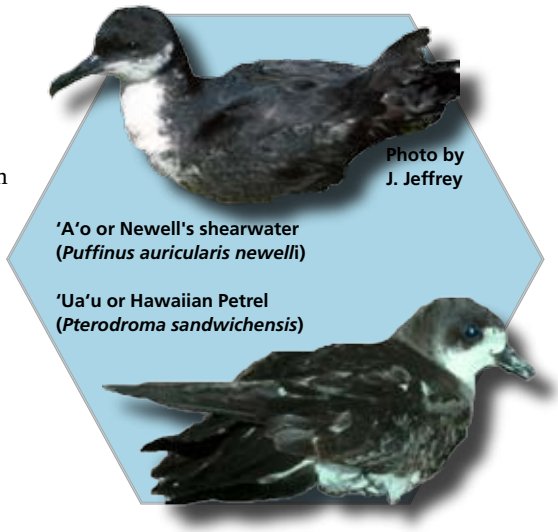


Photo by J. Jeffrey

'A'o or Newell's shearwater (*Puffinus auricularis newelli*)

'Ua'u or Hawaiian Petrel (*Pterodroma sandwichensis*)

Inventories: Several inventories to assess the presence of seabirds were conducted in PACN parks. An inventory at HALE used a combination of audio call-count surveys and visual surveys to detect seabirds within park boundaries. A HAVO inventory focused on colony searches and radar surveys to identify species, flight corridors, and colony sites. Ornithological radar surveys conducted at both HAVO and KALA detected movements, flight directions, and behaviors of flying shearwaters and petrels. An inventory in the National Park of American Samoa (NPSA) was conducted to assess distribution and relative abundance of seabirds along the coastlines of Tutuila Island and at high elevations on Ta'u Island.

Monitoring: The National Park Service is developing a Seabird monitoring protocol to focus on the Hawaiian petrel and Newell's shearwater at HAVO, HALE and KALA, and on low-elevation seabird species at NPSA. Goals of Hawaiian petrel monitoring include detection of changes in nest densities within known colonies, assessment of reproductive success and predation rates in these colonies, and changes in the distribution of colonies. The presence of both species at KALA will be determined using auditory and visual identification methods. The distribution and relative abundance of seabirds at NPSA will be monitored through dawn boat surveys of park shoreline.

Conservation and Management: Because seabirds show remarkable site fidelity, returning to the same burrow or nest yearly, colonial nesting areas are in need of protection. PACN Parks provide important seabird breeding and roosting habitat and offer a measure of protection from human activities and predators. At HALE and HAVO, introduced predators and ungulates have been removed on park lands through fencing of sensitive areas and intensive trapping programs. Also, access to small islands near KALA is carefully regulated to minimize seabird disturbance and prevent introductions of invasive species. Outreach programs to educate the public about the importance of seabirds, and the effects of human disturbance at nest sites, have begun at several parks. These efforts, in conjunction with long-term monitoring, will help parks to maintain, protect, and enhance our seabird resources.

—G. Ackerman & D. Hu

For more information:

1. http://www.fws.gov/pacific/migratorybirds/Seabird_Conservation_Plan_pdf.htm
2. http://www.state.hi.us/dlnr/dofaw/cwcs

A PACN Update on Inventories

Which natural resources inventories are pau (finished) in the Pacific Island Network?

With the aid of many partners and co-operators the Pacific Island Network (PACN) has completed several biotic and abiotic inventories. Biological inventories provide lists of species found in national parks. The initial emphasis focused on vertebrates and vascular plants in certain PACN national park units. One of our goals is to publish many of these inventory reports as peer-reviewed technical reports for use by the NPS, other academic and scientific institutions, and the public.

Completed PACN Natural Resource Inventories as of June, 2007

All of the completed natural resource inventories are available online on the PACN inventory webpages: http://www1.nature.nps.gov/im/units/pacn/inventories.cfm .

Birds

Lowland bird inventory, Hawai'i Volcanoes National Park

Forest bird inventory of the Kahuku unit of Hawai'i Volcanoes National Park

Shorebird, seabird, and waterbird inventory of Pu'uhonua O Hōnaunau National Historical Park

Shorebird, seabird, and waterbird inventory of Pu'ukoholā Heiau National Historic Site

Inventory of seabirds in National Park of American Samoa

Petrel and shearwater surveys in and near Kalaupapa National Historical Park

Plants

Plant Inventory of the 'Ōla'a Trench at Hawai'i Volcanoes National Park

Bocconia frutescens distribution on the island of Hawai'i

Botanical and ethnobotanical inventories of the National Park of American Samoa; Ofu, Olosega, Ta'u {Manu'a Islands}, and Tutuila Island

Mammals

Hawaiian hoary bat inventory in national park units on the islands of Hawai'i, Maui, and Moloka'i

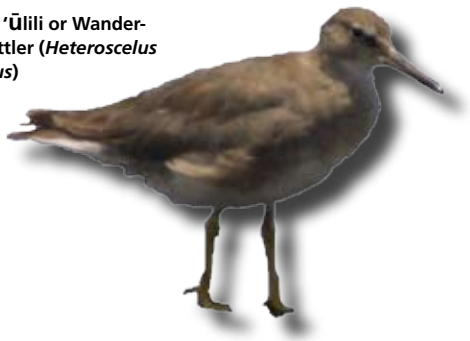
Amphibians and Reptiles

Inventory of reptiles and amphibians in Hawai'i Volcanoes, Haleakalā, and Kalaupapa national park units

Left: Jackson Chameleon (*Chamaeleo jacksoni*)

Right: Fua'o or Brown booby (*Sula leucogaster*)

Left: Gatae or Coral tree flower (*Erythrina variegata*)



Right: 'Ūlili or Wandering tattler (*Heteroscelus incanus*)

—K. Schlappa

Herpetological inventory in West Hawai'i national park units: Pu'uhonua o Hōnaunau National Historical Park, Kaloko-Honokōhau National Historical Park, Pu'ukoholā Heiau National Historic Site

Abiological Inventories

Weather and Climate Inventory, National Park Service, Pacific Island Network

High resolution climate maps for the Pacific Basin Islands, 1971-2000

Baseline water quality data inventory and analysis reports (Horizon reports for several PACN park units)

PACN water quality database and report (USGS administrative report)

Paleontological Resource Inventory and Monitorng

Find Out More

Reports published through the Pacific Cooperative Studies Unit of the University of Hawaii are also available at: http://www.botany.hawaii.edu/faculty/duffy/techrep.htm .

Additional reports ranging from invertebrate fauna to moss to historical pig inventories are expected to be available soon.

Ala Kahakai National Historic Trail — Hawai'i

Background: Located on the Island of Hawai'i, the Ala Kahakai National Historic Trail (ALKA) was designated in 2000. Rich in culture, history, and natural beauty, this 175-mile corridor runs from 'Upolu Point in North Kohala, along the entire western shoreline of the island, around South Point, and into Hawai'i Volcanoes National Park.

Approximately 50% of the trail is government owned including 17% managed by the National Park Service (NPS). Participation from private landowners, governments, and the public is voluntary. A memorandum of understanding with the State of Hawaii and Hawai'i County is being finalized.

The long term goals of the ALKA and its ahupua'a (traditional Hawaiian land division, usually from the mountain to the sea) community-based partners are to identify, access, link, manage, and interpret alignments to allow for a continuous route and a system of trails along the 175-mile corridor. The geo-cultural platform from which planning and management will be launched is the ahupua'a system of which there are 210 within the trail corridor. The role of the NPS is to administer the trail which will be opened on a segment-by-segment basis.

Similar to the production crew of a play or movie, our mission is to preserve and manage a system of trails and associated features to provide an authentic setting for the practice and perpetuation of the Hawaiian culture as determined by elders, scholars, and practitioners. The ahupua'a community-based management structure will provide guidance to trail visitors as to how to integrate recreational uses within a given trail segment and to offer authentic interpretive programs, educational experiences, and stewardship opportunities. The authenticity and integrity of ALKA rests in the capacity of the community and visitors to apply these values to the management and use of the trail's cultural and natural features.

Consultation in Planning and Implementation for the Ala Kahakai National Historic Trail: Authenticity and integrity must come from two perspectives: that of those whose ancestors built and managed the trail and associated features; and from the perspective of contemporary Euro-American sciences associated with stewardship and use.

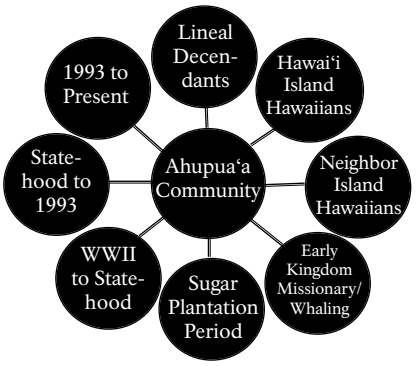
The administrative challenge for ALKA and its partners is to integrate these epistemic perspectives into the management and interpretation of the trail in a manner that honors and perpetuates the values and lifestyles of the host culture.

Ahupua'a Community-Based Approach to Consultation: The Ala Kahakai has the characteristics of both a scenic, continuous shoreline trail, and a historic trail that preserves and interprets history at the places that history was made. More significant is that the host culture – the Native Hawaiian community including other ethnicities that have deep ties to the land – continues to value trails and the places that trails lead.

Use of trails to access places for spiritual and traditional practices, subsistence gathering, and recreation continue unbroken from ancient times through today. Families and communities whose ancestors built trails and associated features continue to retain deep kinship connections to these places. Concurrently, many have become displaced, increasingly alienated, and saddened by the changes to the land. Trail management planning needs to begin with this question: How can national historic trail designation serve to connect, reconnect, or enhance the relationships of those with deep ancestral and historic ties to the land?

Building community, promoting meaningful involvement, and getting to know your neighbors are important aspects of this community-based initiative. The ALKA consultation process for trail management is expected to be continuous from planning through implementation and evaluation. While involvement and input are welcomed, respectful acknowledgement of one's ancestry and origin is important. As such, and in keeping with the traditions of the host culture, it's suggested that comments offered at public meetings be preceded by an informal, voluntary protocol that places the commenter within a historical period as follows:

Ala Kahakai NHT Consultation Protocol for Trail Management Planning



This social protocol was developed as a result of comments received at several meetings that addressed how the federal government consults with Native Hawaiians. No distinction was acknowledged between those from the ahupua'a or larger local districts from those who are from other districts of the island or from neighbor islands. As such, decisions could be made based on input from those who are not from the affected areas. A best practice model is being developed to address this issue.

Inventory and Monitoring: The role of contemporary science within the ALKA setting is to provide research and new technology to assist in management, thereby assuring the sustainability of traditional and modern uses within a healthy natural and human environment. Several biological inventories were conducted in the three West Hawai'i National Parks and Hawai'i Volcanoes National Park connect by the ALKA corridor. Although Vital Signs monitoring will also occur at all of these parks, only the Climate, Water quality, and Early detection of invasive plants Vital Signs will have a direct impact on ALKA. In addition, the final draft of the trail's Comprehensive Management Plan/ EIS will be available for public comment in the latter part of this year. —A. Arakaki

Come visit us:

Visit the ALKA website to discover more about this trail and its history at: http://www.nps.gov/alka/